



Q.PLUS BFR-G4.1 280-290

Q.ANTUM SOLAR MODULE

The new high-performance module **Q.PLUS BFR-G4.1** is the ideal solution for all applications thanks to its innovative cell technology **Q.ANTUM**. The world-record cell design was developed to achieve the best performance under real conditions – even with low radiation intensity and on clear, hot summer days.



LOW ELECTRICITY GENERATION COSTS

Higher yield per surface area and lower BOS costs thanks to higher power classes and an efficiency rate of up to 17.7%.



INNOVATIVE ALL-WEATHER TECHNOLOGY

Optimal yields, whatever the weather with excellent low-light and temperature behavior.



ENDURING HIGH PERFORMANCE

Long-term yield security with Anti-PID Technology¹, Hot-Spot-Protect and Traceable Quality Tra.Q™.



EXTREME WEATHER RATING

High-tech aluminum alloy frame, certified for high snow (5400Pa) and wind loads (4000Pa) regarding IEC.



MAXIMUM COST REDUCTIONS

Up to 10% lower logistics costs due to higher module capacity per box.



A RELIABLE INVESTMENT

Inclusive 12-year product warranty and 25-year linear performance guarantee².



THE IDEAL SOLUTION FOR:



Rooftop arrays on residential buildings



Rooftop arrays on commercial/industrial buildings

Engineered in **Germany**

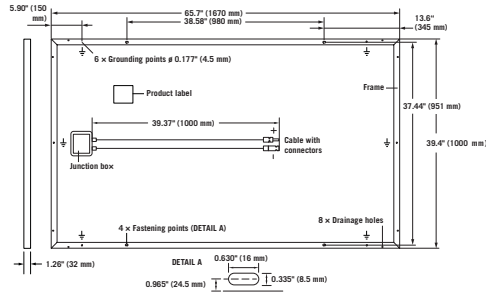


¹ APT test conditions: Cells at -1500V against grounded, with conductive metal foil covered module surface, 25°C, 168h

² See data sheet on rear for further information.

MECHANICAL SPECIFICATION

Format	65.7 in × 39.4 in × 1.26 in (including frame) (1670 mm × 1000 mm × 32 mm)
Weight	41.45 lbs (18.8 kg)
Front Cover	0.13 in (3.2 mm) thermally pre-stressed glass with anti-reflection technology
Back Cover	Composite film
Frame	Black anodized aluminum
Cell	6 × 10 Q.ANTUM solar cells
Junction box	3.54-4.33 in × 2.99-3.03 in × 0.59-0.75 in (90-110 × 76-77 × 15-19 mm), Protection class IP67, with bypass diodes
Cable	4 mm ² Solar cable; (+) ≥ 39.37 in (1000 mm), (-) ≥ 39.37 in (1000 mm)
Connector	MC4, IP68



ELECTRICAL CHARACTERISTICS

POWER CLASS	280	285	290		
MINIMUM PERFORMANCE AT STANDARD TEST CONDITIONS, STC¹ (POWER TOLERANCE +5W / -0W)					
Minimum	Power at MPP²	P_{MPP} [W]	280	285	290
	Short Circuit Current[*]	I_{SC} [A]	9.41	9.46	9.52
	Open Circuit Voltage[*]	V_{OC} [V]	38.97	39.22	39.48
	Current at MPP[*]	I_{MPP} [A]	8.84	8.91	8.98
	Voltage at MPP[*]	V_{MPP} [V]	31.67	31.99	32.29
	Efficiency²	η [%]	≥ 16.8	≥ 17.1	≥ 17.4
MINIMUM PERFORMANCE AT NORMAL OPERATING CONDITIONS, NOC³					
Minimum	Power at MPP²	P_{MPP} [W]	207.0	210.7	214.4
	Short Circuit Current[*]	I_{SC} [A]	7.58	7.63	7.68
	Open Circuit Voltage[*]	V_{OC} [V]	36.37	36.61	36.84
	Current at MPP[*]	I_{MPP} [A]	6.93	6.99	7.05
	Voltage at MPP[*]	V_{MPP} [V]	29.87	30.15	30.42

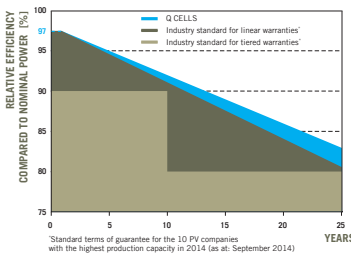
¹ 1000 W/m², 25 °C, spectrum AM 1.5G

² Measurement tolerances STC ± 3%; NOC ± 5%

³ 800 W/m², NOCT, spectrum AM 1.5G

^{*} typical values, actual values may differ

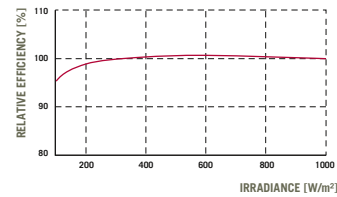
Q CELLS PERFORMANCE WARRANTY



At least 97% of nominal power during first year. Thereafter max. 0.6% degradation per year. At least 92% of nominal power up to 10 years. At least 83% of nominal power up to 25 years.

All data within measurement tolerances. Full warranties in accordance with the warranty terms of the Q CELLS sales organisation of your respective country.

PERFORMANCE AT LOW IRRADIANCE



Typical module performance under low irradiance conditions in comparison to STC conditions (25 °C, 1000 W/m²).

TEMPERATURE COEFFICIENTS

Temperature Coefficient of I_{SC}	α [%/K]	+0.04	Temperature Coefficient of V_{OC}	β [%/K]	-0.29
Temperature Coefficient of P_{MPP}	γ [%/K]	-0.40	Normal Operating Cell Temperature	NOCT [°F]	113 ± 5.4 (45 ± 3 °C)

PROPERTIES FOR SYSTEM DESIGN

Maximum System Voltage V_{sys}	[V]	1000 (IEC) / 1000 (UL)	Safety Class	II
Maximum Series Fuse Rating	[A DC]	20	Fire Rating	C (IEC) / TYPE 1 (UL)
Design load, push (UL)²	[lbs/ft ²]	75 (3600 Pa)	Permitted module temperature on continuous duty	-40 °F up to +185 °F (-40 °C up to +85 °C)
Design load, pull (UL)²	[lbs/ft ²]	55.6 (2666 Pa)	² see installation manual	

QUALIFICATIONS AND CERTIFICATES

UL 1703; VDE Quality Tested; CE-compliant; IEC 61215 (Ed.2); IEC 61730 (Ed.1) application class A



PACKAGING INFORMATION

Number of Modules per Pallet	32
Number of Pallets per 53' Container	30
Number of Pallets per 40' Container	26
Pallet Dimensions (L × W × H)	68.7 in × 45.3 in × 46.1 in (1745 × 1150 × 1170 mm)
Pallet Weight	1435 lbs (651 kg)

NOTE: Installation instructions must be followed. See the installation and operating manual or contact our technical service department for further information on approved installation and use of this product.

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